



## State of Utah

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## Department of Environmental Quality

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Director

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cc: Tom 0005

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Executive Secretary

March 5, 2009

Ekaterina Harrison  
P.O. Box 283  
La Sal, UT 84530-0283

Subject: Division of Water Quality Responses to Your Written Comments Regarding  
Proposed Ground Water Discharge Permit UGW370007 for the Energy Queen Mine

Dear Ms. Harrison:

The Division of Water Quality (DWQ) received your comments on February 26, 2009 via email regarding proposed Ground Water Discharge Permit UGW370007 for the Energy Fuels Resources Corporation Energy Queen uranium mine. We appreciate your concerns and would like to address each of your comments as they appeared in your letter. Your comments are indicated in italics below and are followed by our response.

**Comment 1:** *Here in La Sal we are finally seeing an increasing American eagle population. These ponds will not be protected from birds flying in and drinking the water.*

**DWQ Response:** Under the Utah Water Quality Act, the Division of Water Quality is charged with protecting the quality of Utah's surface and ground water for appropriate beneficial uses and to protect public health from improper disposal of human, animal, or industrial wastes while giving reasonable consideration to the economic impact. I will direct your concern for the eagle population to Paul Baker, Minerals Program Manager in the Division of Oil, Gas and Mining. The Division of Oil, Gas and Mining and its sister agency, the Division of Wildlife Resources, may have some viable options for trying to prevent birds from flying in and drinking the pond water.

**Comment 2:** *We have many residents currently that have received compensation for uranium poisoning, and there are many residents that have died due to uranium poisoning. In the uranium boom the community was assured that everything would be safe and now this and other mines plan to open up these same mines. What guarantees do the people of our community get that this will not be a repeat of the past?*

**DWQ Response:** The Division of Water Quality is responsible for protecting the quality of Utah's surface and ground water resources for beneficial uses. The purpose of the Ground Water Discharge Permit is to prevent impairments to ground water beneficial uses by requiring the application of best available technology to minimize discharges of pollutants, and ground water quality monitoring. We do not regulate mine worker health and safety requirements, radiation exposure surveillance, or air monitoring.

Based on information provided by the Energy Fuels Resources Corporation, the following protective measures would be implemented to proactively prevent risks to human health that may be caused by the mining operation.

- The mine would operate in accordance with federal regulations that are designed to protect the mine workers and the general public from radiation exposure.
- The miners would be protected through establishment of adequate ventilation and monitoring of radiation levels in the underground work areas in accordance with Mine Safety and Health Administration (MSHA) regulations.
- The general public would be protected by monitoring of radiation emissions from the mine using methods approved by the U.S. Environmental Protection Agency (EPA) and adhering to ore transportation regulations established by the U.S. Department of Transportation.
- The air emissions would be measured for radon levels and flow rates in accordance with EPA regulations. These data would then be input into an EPA air modeling program to predict radiation levels at the nearest residence.
- Ore haul trucks would be tarped and checked for radiation levels prior to leaving the mine site and the mill site on the return leg. If gamma readings are found to be elevated, the ore truck would be cleaned using a power wash or other method to meet appropriate radiation standards.
- All scrap metal and other recyclables would be checked with a gamma meter prior to leaving the mine site. If the gamma readings are found to be elevated, the material would be cleaned using a power wash or other method to meet appropriate radiation standards.

**Comment 3:** *This mine and other mines that this company owns, past and present, have not made any effort to re-claim or clean up the contamination of the mines that have stayed abandoned for years. Now that they can see that money can be made they want to re-open these mines. I understand they will post a bond, but again I feel they should also be required to at least close and clean up the other mines they have left. Unfortunately, it appears that it is we the residents that suffer the results of the contamination and in the end it is we the taxpayers that end up with the bill for the clean up. This we have all seen very clearly from the last uranium boom.*

**DWQ Response:** The Division of Oil, Gas and Mining (DOGM), not the Division of Water Quality, is responsible for reclamation of the mine site. Under Rule R647-4 of the Utah Administrative Code, DOGM requires the mining company to submit for approval a Notice of Intention to Commence Large Mining Operations containing all the required information including:

- A topographic map showing property boundaries of surface ownership of all lands which are to be affected by the mining operations.
- Known areas which have been previously impacted by mining or exploration activities within the proposed disturbed area.
- Proposed surface facilities, including but not limited to buildings, stationary mining/processing equipment, roads, utilities, power lines, proposed drainage control structures, and, the location of topsoil storage areas, tailings or processed waste facilities, disposal areas for overburden, solid and liquid wastes and wastewater discharge treatment and containment facilities.
- A border clearly outlining the acreage proposed to be disturbed by mining operations.
- Plans, profiles and cross sections of roads, pads or other earthen structures to be left as part of the post-mining land use.
- Maps identifying surface areas which will be disturbed by the operator but will not be reclaimed, such as solid rock slopes, cuts, roads, or sites of buildings or surface facilities to be left as part of the post-mining land use.

- Baseline information maps and drawings including soils, vegetation, watershed(s), geologic formations and structure, contour and other such maps which may be required for determination of existing conditions, operations, reclamation and post-mining land use.
- A reclamation activities and treatment map to identify the location and the extent of the reclamation work to be accomplished by the operator upon cessation of mining operations. This drawing shall be utilized to determine adequate bonding and reclamation practices for the site.

In addition, the company is required to submit a Reclamation Plan and Reclamation Surety to DOGM for approval prior to the commencement of operations.

**Comment 4:** *I feel pumping this water to holding ponds will increase the contamination we already have in our community by bringing this water out of the mine to the environment we have to breath and live with. This Mine is within ½ a mile of the town.*

DWQ Response: Mine water will be stored in a one-acre storage pond prior to treatment. Although there will be some evaporation to the atmosphere, the pond is designed as a no-discharge facility with a double 60-mil high density polyethylene (HDPE) synthetic liner with a leak detection layer and leak collection system. As indicated in our response to Comment 2, the mine would operate in accordance with federal regulations that are designed to protect the mine workers and the general public from radiation exposure.

**Comment 5:** *Pond Liners with leak detection is great but who will monitor the real issues? When they leak or flood over during spring thaws they will contaminate West Coyote Creek, which is located right behind this mine. Will the Department of water resources guarantee they will monitor this concern???? West Coyote Creek flows into the Colorado River.*

DWQ Response: Under normal operating conditions, the Untreated Water Pond will maintain a minimum two feet of freeboard, which is required by ground water discharge permit as a best available technology performance standard. This is more than sufficient to contain the 100-year, 24-hour storm event for the area, which is 3.06 inches according to the NOAA, Atlas 14. Should a situation develop in which the Untreated Water Pond is unavailable for use, the single HDPE lined Contingency Pond will be used on a temporary basis.

**Comment 6:** *What will happen to our water wells when they pump out this water from the mine? We know most of the water is already contaminated with uranium. Most of us depend on drinking water from other sources, but most water wells in this area are shallow and pumping out a deep mine will likely drop the water table. Back in the days when this mine was initially dug they hit water and were not required to stop it. Water tables were mixed and no-one cared. Over many years with the shutdown finally the water tables stabilized. NOW they want to open up the issue again.*

DWQ Response: Private drinking water wells in the area are typically screened near the base of the Dakota/Burro Canyon Formation, which is located at a depth of 220 feet below the ground surface at the mine. The Salt Wash Member of the Morrison Formation is the ore unit that is being dewatered and is located at a depth of 670 feet below the ground surface. Intermingling of ground water from the Dakota/Burro Canyon aquifer and the Salt Wash Member will be prevented by two mechanisms, one that is man-made and one that is naturally-occurring. The man-made mechanism for preventing ground water mixing is the concrete casing that has been installed in the mine shaft to provide a seal for preventing cross-communication with other aquifers. This concrete casing may develop minor cracks that could allow some of the shallower Dakota/Burro Canyon groundwater to flow into the mine. However, Energy Fuels would grout any cracks encountered to minimize inflows and potential depletion of the shallow aquifer.

The naturally-occurring mechanism for preventing ground water cross-communication is the 450-foot thick Brushy Basin Member aquitard, which is present between the Dakota/Burro Canyon aquifer and the Salt Wash Member. The Brushy Basin Member is composed of 368 feet of mudstones interbedded with thin and discontinuous sandstone lenses. The bentonitic content and very low permeability of the Brushy Basin mudstones makes this aquitard an effective natural barrier for preventing cross-communication between the Dakota/Burro Canyon aquifer and the Salt Wash Member.

**Comment 7:** *I feel the opening of the Energy Queen Mine and the request to pump contaminated water to the surface and store it will be detrimental to the safety of all residents living in La-Sal. We already have contamination from the old mines of the Uranium Boom years ago. But we cannot change that. It is in the past. The future is my concern. Why open up the past and contaminate us again.*

DWQ Response: Please refer to our responses to Comments 2 and 3 above.

**Comment 8:** *I feel if you are going to permit this at least the Dept of Water Resources should have a community meeting to hear our concerns. Not just place a notice in the local paper that most residents do not even subscribe to...*

DWQ Response: In accordance with UAC R317-6-6.5 of the Administrative Rules for Ground Water Quality Protection, "The Executive Secretary shall publish a notice of intent to approve in a newspaper in the affected area and shall allow 30 days in which interested persons may comment to the Board. Final action will be taken by the Executive Secretary following the 30-day comment period." A public notice was published in the San Juan County Record, which identifies itself as the hometown newspaper for San Juan County where the Energy Queen Mine is located. As indicated in the public notice, a public hearing may be held if written requests are received within the first 15 days of this public comment period that demonstrate significant public interest and substantive issues exist to warrant holding a hearing. To date, your comment letter is the only written request we have received.

**Comment 9:** *I am concerned about wildlife. Animals will drink this water. What they drink will be spread to us. IE: Eagles, Ducks, Doves drink the water we hunt them (Not Eagles) and we get the contamination.*


DWQ Response: Please refer to our response to Comment 1.

**Comment 10:** *Deer and Elk get past the fence we hunt them and again get the contamination.*

DWQ Response: Energy Fuels Resources will enclose the ponds with chain link fencing to prevent deer, elk, and other wildlife from gaining access to the ponds.

I hope I have adequately addressed your concerns related to the proposed Ground Water Discharge Permit. If you have any additional questions, please contact me at [rherbert@utah.gov](mailto:rherbert@utah.gov) or (801) 538-6038.

Sincerely,



Rob Herbert, P.G., Manager  
Ground Water Protection Section

Cc: Paul Baker, DOGM Minerals Program  
Mike Herkimer, DWQ UPDES Section